

Optimum conditions for the production of lipase by alginate-immobilized bacteria

ABSTRACT

A lipolytic *Pseudomonas* sp. has been successfully immobilized in strontium alginate gel bead for use in the production of lipase. This paper reports on the various conditions required for its optimum production. A 3% alginate gel concentration with a 20% (w/v) cell loading gives the highest production of lipase. The production of lipase can be enhanced by aeration and shaking but mass transfer effect may be dependent on the ratio of cell mass and bead size. Prolonged recycling with aeration accelerates the rupturing of the beads compared to non-aerated system. A maximum production of lipase is given by 1.5g of immobilized bacteria in 50ml of culture broth. The immobilized bacteria can withstand recycling up to 24 days, (72h cycle), after which time the beads ruptured. The production, however, remains at 70%.

Keyword: Lipase; Alginate gel bead; Immobilized bacteria